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Learning from the locals: how can co-design support malaria education in a post-colonial environment?

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ABSTRACT

Designing for social good framed within an ethical practice has a long tradition informed by the democratic philosophy of John Dewey, but more recently it has been acknowledged that co-design can embody cultural respect and empathy through an expressed purpose. Using the principles of co-design, a northern European university took a small group of graphic design students to Mozambique to participate in a practice-led research project with local youth groups. The focus was on promoting malaria awareness and preventative education in an area of Africa where the disease is endemic despite large interventions from NGOs. This study examines the iterative process of the co-design project and how it responded to the challenges of a post-colonial environment to deliver a method of communication that was valid and participatory. When people engage in a co-design process, they also engage in ethics, in a process with embedded ethical, reflective and social qualities based on lived knowledge. If design-based social change is going to be effective and sustainable, it must be rooted in empowerment, and not solely dependent on the designer. Applied through this ethical and democratic approach, co-design could provide an engaging new strategy to solve some of the world's greatest social problems.

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Introduction

One of the current dominating themes of both practice and education in graphic design is that we apply our skills to real-world problems in a local and intercultural context, using the tools at our disposal to change the way people think and behave in order to improve their lives. While graphic design practice serves multiple and diverse communities, both commercial and societal – the ability to brand work with a ‘creative conscience’ has never been more desirable or more lauded and awarded. Many young designers feel compelled to work in this way and subscribe to a practice of ‘good design’ for society and ethical employment

practices – for example, giving up a day a week to work pro bono on useful design for social enterprise and initiatives.

Fiss poses the question: ‘how do designers establish relationships with collectives and populations it seeks to help or collaborate with – populations that are more often than not culturally other?’ (2012, 45). Perhaps, it is too easy to say in reply that designers are by their very nature ‘connectivists’, and so are gifted ‘with an inherent capacity to establish and foster links between disciplines and cultures’, able to design solutions to improve economic and ecological wellbeing ‘and cultural sustainability – locally and globally’ (Calahan 2007). Berman argues that it is the ‘professional power, persuasive skills, and wisdom’ (2009, 39) that designers possess to help communicate ideas that can make a better, tolerant and more democratic world.

Questions arise around the ethics of design solutions developed in studios and institutions remote from the problem. National and international professional and student design competitions pose challenging briefs focused on important global issues. However, ‘designers working on these projects are characterized by employing an outside perspective’ as outlined by Janzer and Weinstein in their draft framework for Social Design (2014, 327–340). The work may be socially focused, but not necessarily the result of any intensive ethnographic study or participation by the social groups being addressed:

An outside perspective means that problem definitions and their solutions are identified and created in isolation from the addressed community and their particular social context(s); therefore, interventions in this space often exhibit a disconnect between the people involved and the social phenomena addressed.

(Janzer and Weinstein 2014, 336)

While design practitioners, and increasingly students, who adopt an altruistic approach to problems in the ‘other’ world are doing so with the best intentions, often collaborating with diverse design disciplines on beneficial solutions, questions remain around a design solution from an outside or ‘other’ perspective being truly transformative for the targeted communities, or a form of ‘Design Neocolonialism’ – ‘Neocolonialism can be understood as influence over a population, community, or society in the absence of direct, obvious or formal control’ (Janzer and Weinstein 2014, 336).

Janzer and Weinstein argue that if ‘design-based social change is going to be effective and lasting, it must not be dependent upon the designer; rather, it must be rooted in empowerment’ (2014, 331). While designing for social good framed within an ethical practice has long traditions as seen with Dewey (1927); Garland (1964) and Freire (1970), more recently, Rawsthorn (2013) acknowledges that co-design can embody cultural respect and empathy through an expressed purpose.

Co-design can provide an authentic community of practice, bringing a diverse range of benefits to the process: improving idea generation and development,

decision-making and promotion of creativity and co-operation (Steen 2013; Steen, Manschot, and De Koning 2011). These are benefits that rely heavily on communication skills in what Sanders and Stappers call the 'fuzzy front end' (2008, 6) of the design process.

This study examines the process of the co-design project and how it responded to the challenges of a post-colonial environment to deliver a method of communication that was valid and participatory. By taking on a project in a Portuguese-speaking country in Africa, we had to rely on interpreters, but it also necessitated participants developing effective visual communication skills. The local NGO participants may never have thought of themselves as designers but by applying 'design thinking' (Brown 2009, 4), our graphic design researchers enabled them to think and communicate in new ways to design visual communication for areas of diverse ethnicity and levels of literacy.

Context

There is nothing like returning to a place that remains unchanged to find ways in which you yourself have altered.

(Nelson Mandela *Long Walk to Freedom* 2013)

When we left Mozambique in 2014 after two weeks in the remote coastal town of Mossuril, the desire to return was firmly placed in our hearts and minds. We, as principle investigators, and our student researchers reflected and analysed the experience and efficacy of our first projects: designing the branding and publicity for Mossuril's first international film festival, and a start-up soap-making cooperative. These were designed at a distance in the UK, and then implemented with local assistance in the field. The students had anticipated 'a life changing experience' in Mozambique during the implementation of their designs, and on their return to the UK came to 're-evaluate what design could be' having witnessed its impact in action in the Mozambican community. Our research revealed how an international project combined with graphic design advocacy can have an educational and cultural impact locally and globally (Macdonald and MacLeod 2016).

It was through interaction with our academic peers during a series of conferences while disseminating this research that we became aware of the opportunity to further activate social change and global citizenship using our design practice more collaboratively. Design can make a difference. So, we set out to prove it. Again.

At 'Sunset Boulevard', the community guesthouse run by our partner NGO where we stayed in 2014, local workers fell ill daily; there were deaths during our stay, despite the availability of low-cost malaria treatment at the local hospital and rural health posts. '3.4 billion people worldwide are at risk of malaria infection, 90% of all malaria deaths occur in sub Saharan Africa' (World Health Organization 2013). We realized that we had an opportunity, a duty even, to use

our new-found international expertise to make some impact on malaria education in Africa, starting where we left off in the Nampula region of Mozambique, a place where we were confronted by endemic malaria.

First, we sought out NGOs working in the field of health education and scoped out the feasibility and cost of a co-design project that could be owned and developed by local action groups. Through UNICEF, we identified and corresponded with two NGOs who were working in the Nampula region. Large-scale health education projects have found that the 'ownership factor...has shown that where the community has REAL influence on the planning process and implementation of projects, the chances for long-term sustainability are good' (Haaland 2001, 9).

In a part of the world where 'day to day' survival is a challenge, taking the time to consider health and wellbeing is not the first priority, and ingrained cultural behaviours and complexities are difficult to break in rural areas. We needed to check these assumptions and investigate other problems by working with people from the area. 'Other factors such as ethnicity also influences treatment-seeking with certain ethnic groups being much more reliant on traditional self-medication remedies' (Mensah 2004).

In Mossuril, a coastal town in Northern Mozambique, new bright blue mosquito nets, impregnated with toxic DEET are used as fishing nets and also to make chicken coops instead of their original purpose which is to enclose beds to protect people while they sleep at night. The village hospital in Mossuril gives out free malaria treatment to all who test positive, but many people with symptoms do not go there, preferring to visit a traditional healer who cannot cure them.

Neo-colonialism and designers' unconscious bias

In recent previous design projects that were undertaken and implemented in an African context, specifically Mozambique as described above (Macdonald and MacLeod 2016), the analysis questioned how the participants understood Mozambican nationalism as an 'imagined community' (Anderson 2006). It exposed the differences of a perspective formed from the UK compared to the reality experienced by Mozambicans. Central to that was the exposure of unconscious prejudices and recognizing the different view of the world seen from the UK's privileged position as a colonial power when questioning Mozambican post-colonial identity (Said 1994; Chomsky 2000):

Culture is never just a matter of ownership, of borrowing and lending with absolute debtors and creditors, but rather of appropriations, common experiences, and interdependencies of all kinds among different cultures.

(Said 1994, 262)

Without questioning these cultural and historical power dynamics, any meaningful interactions between European and African participants in projects, such as

these design briefs, could be inhibited by cultural ignorance and inappropriate 'neo-colonial construction of the westerner as racially and culturally superior' (Raymond and Hall 2008, 531). These preconceived stereotypes might be carried over from our own culture unintentionally through unconscious bias and 'cultural essentialism', which Crouch (2000) alerts us to stultifying cultural development.

Freire (1970) warns against imposing western paradigms onto communities. Resistance from a local hospital doctor and criticism from a radio DJ were reminders of the post-colonial sensitivities in the region. To them, the project represented a 'cultural invasion, good intentions notwithstanding' (Freire 2005, 95). Hegemonic western research methods and knowledge of co-construction can be considered as a new form of colonialism producing a subjugation of local knowledge (Sousa Santos 2005). As researchers from a Northern European university, we must be mindful through careful reflexivity and awareness to acknowledge and articulate the mixed ecology of knowledge that is present in Mozambique.

Better aware of inhibiting neo-colonial attitudes, greater intercultural competency gained through experience and with an 'aspiration to democratize knowledge production itself which recognizes expertise in everyone' (Horner 2016, 16), we rejected the 'banking model' of education that fills up empty vessels in favour of an emancipatory pedagogy (Freire 1970). By working more as equals with local students and young people, participants 'function as an incubator of new meanings, representation and language and thus the locus of the production of a particular local theory or "situated knowledge"' (Genat 2009, 102).

Co-design as an ethical design method

In the last decade, there has been increased scholarship in the field of co-design, a process of creative co-operation bringing together participants in the design process from diverse backgrounds. Sanders and Stappers (2008) describe a 'collective creativity' that is applied across the entire span of the design process of co-creation.

Kleinsmann and Valkenburg describe co-design as:

... the process in which actors from different disciplines share their knowledge about both the design process and the design content... in order to create shared understanding on both aspects... and to achieve the larger common objective: the new product to be designed.

(Kleinsmann and Valkenburg 2008, 369–386)

Co-design and co-creation fall under the term 'participatory design' originating in Scandinavia and practiced in Europe for four decades. Participatory design is an activity where designers and people not trained in design, but likely to be the end-user of the design outcome, work together collaboratively on essentially

human-centred design outcomes, which address social questions and issues. The non-designers bring expertise to the design problem, and take on the role of 'expert' in the design situation. Often, but not exclusively, the expertise they bring is a lived experience or activity – 'a kind of design humanism aimed at reducing domination, and forming consensus' (Keshavarz and Mazé 2013).

A philosophical underpinning for co-design can be found in the work of John Dewey, particularly his pragmatic perspectives on lived experience and community. Dewey advocated democracy, and 'promoted processes in which people are empowered to jointly reflect on their practices and experiences, to communicate and cooperate, and to improve their own or other people's situations' (Steen 2013, 18–21). Dewey viewed lived knowledge as instrumental, informing the design process, to be used to empower alternative positive futures through communication and co-operation.

Reflection on lived experiences and their content brings expertise as well as ethical qualities to the co-design process (Steen 2013). It can be argued that co-design is a reflective practice, which is the result of doing or experiencing things in the world, and leading to a democratic and community-focused process of joint enquiry, discussion, evaluation and design solution through consensus.

Applied through this ethical and democratic approach, co-design could provide an engaging new strategy to solve some of the world's greatest social problems. Brown argues:

... what we need are new choices – new products that balance the needs of individuals and of society as a whole; new ideas that tackle the global challenges of health, poverty, and education.

(Brown 2009, 3)

Further, he suggests that a greater range of problems can be tackled if the tools of design-thinking are put 'into the hands of people who may have never thought of themselves as designers' (Brown 2009, 3).

Advocating malaria prevention through co-design: reading the signs

Except for the immediate satisfaction of biological needs, man lives in a world not of things but of symbols.

(Von Bertalanffy 1968)

Mosquito nets are distributed regularly by the bigger charities, but they are not always used properly – they make useful fishing nets, even when impregnated with toxic insect repellent. A walk along the beach reveals a cottage industry of young boys and fishermen, cutting up the distinctive blue nets and re-assembling them. Often, there are not enough nets for everyone in a family, and some members are unprotected at night, mostly pregnant women and children. Holes in the nets due to wear, but more often because they are eaten during the day by rats, render them useless. Tropical rain, caught in discarded vessels, provide breeding grounds for mosquitos, and piles of uncollected

rubbish multiply the places in which they can thrive. Although it is assumed that everyone will know what to do with a mosquito net, that is not always the case. In Nampula, in September 2016, a riot broke out because local people, hired to show others how to use the nets, did not get paid for their time and the nets remained in boxes.

We held nightly conversations with volunteers and local activists about the problem, considering how our skills as graphic designers could be used to encourage good decision-making and behaviour change at key moments.

We considered ways in which we could communicate effectively. In the first instance, we looked closely at the indigenous culture of painted wall murals – this approach, used during our trip in 2014, would have been impactful and easy to produce in a country with little in the way of supply chain, but rich in people power.

We considered placing messages on food packaging, but consultation with representatives from the Malaria Consortium in Maputo via Skype diverted us away from this route, due to negotiation and implementation difficulties in a highly bureaucratic country, with layers of required ‘permissions’.

We were aware of how little everyone in Mossuril had in the way of material possessions. Small badges given as gifts were very sought after, as were World Cup Football stickers which were displayed proudly on tee shirt sleeves, or placed as a motif on the front. Some children and young people had school bags, where they attached the badges and stickers.

The simplicity of a set of stickers – visual signposts, communicating key moments, where a small change in behaviour could possibly save a life, designed to be placed around the home, on clothes, at health posts and schools – began to appeal to us as a way forward. As well as a set of stickers, a circular piece of visual communication could be printed onto anything at little cost – a small canvas bag, a tee-shirt, a rice sack, a water bottle or a piece of ‘Capulana’ fabric worn by the majority of women every day.

The official language of Mozambique is Portuguese, although in Mossuril, Maçua, a regional dialect is spoken. It was important to develop visual communication that did not rely on any words, only images and symbols that everyone could understand, and held meaning for the community. This approach meant the stickers would not be limited to one area or country; if the work had impact, they could be rolled out and used in other parts of Africa.

Haaland (2001, 1986) (Fussell and Haaland 1978) has examined the problem of communicating health education in areas of high illiteracy. Her research on using pictorial forms to record the distribution of drugs in community-directed health-care programmes in Nigeria as a pilot was then rolled out to Mali, Cameroon, Ghana and Uganda.

Haaland states that artists and designers must familiarize themselves with how people live in remote rural areas, and should portray people simply and realistically – ‘The most effective style for communicating with rural audiences

has been found to be simple line drawings and these are also the easiest to reproduce' (Haaland 2001, 15).

It is also important that the drawings are not 'too local', for example an 'artist in Nigeria added face marks on his drawings, which resulted in the drawings being rejected in other areas close by, where such face marks were not used' (Haaland 2001, 22).

Lance Wyman, renowned designer of such iconography as the Mexico '68 Olympic logo, is a strong believer that design should be ingrained into everyday life, so that it not only communicates aesthetically, but also makes people's lives easier. But unclear images can be just as confusing as words in a foreign language – icons need to be 'legible and identifiable' to communicate effectively. 'Imagery can be dumb, just as words can. The difference is that as long as the icon is identifiable, you'll have a system that doesn't rely on language – that's a big plus' (Wyman 2016).

Form follows content; in this instance, we had identified a low-cost form, but we had no expertise on content, except from information discussed with our NGO partner in 2014 and our further research. What were these moments of visual communication that would change behaviour? We returned to Mozambique in 2016 with a plan – to enlist the help of local people to develop content based on lived experience of malaria and to co-design a set of symbolic stickers.

The co-design process would also develop a tone of voice for the imagery, in order to ensure that the messages are read with authenticity and with a directness that avoids any hint of post-colonial voice that could otherwise inhibit or cloud their reception. Bourdieu (1991) describes these as dialects, how we say it is as important as what we say.

'Learning from the Locals' co-design in an intercultural context

In June 2016, two lead researchers, one female, one male (1, 2) and four research assistants, two females, two males (A,B,C,D) arrived in Nampula, Northern Mozambique for two weeks to carry out ethnographic research and co-design in three locations, with pre-arranged groups of people.

The objective of the research was to use graphic design workshops to identify content for health communication, and to engage local groups in the graphic design of these stickers – developing and using the 'vernacular vigour of indigenous, local, and special interest subcultures' (McCoy 2004, 239).

The intention was to position the research within Janzer and Weinstein's draft framework for social design, where an inside perspective is cultivated by working closely with communities who have lived experience of the problem. This approach 'requires the designer to achieve a high level of trust from the community, ...and has developed a thorough understanding of all relevant complex social issues and systems'. Further, the design intent should 'incorporate the end user throughout the design process' (Janzer and Weinstein 2014, 334–335).

The project was approved by the University research ethics committee. All the identified participants gave signed approval and permission to disseminate findings beforehand. Other participants joined the process in the field, and were asked to approve the project at that point, and agree to participation.

In the run up to arriving in Mozambique, the project leads worked closely with UNICEF in Nampula, who, actively engaged in malaria prevention advocacy, approved the project outline. They recommended an affiliated group to work with – the local delegation of Associaçao Coalizao da Juventude Moçambicana, a national group of social mobilizers and associations, who trained young people to become leaders within their communities, and advocate education, and empowerment of young people, especially girls.

We also worked closely with our previous NGO partners based in Mossuril and had developed 'a high level of trust from that community' (Janzer and Weinstein 2014, 334–335). The project proposal was discussed by email and Skype with the leader of the Coalizao delegation in Nampula and The Teran Foundation in Mossuril, in both Portuguese and English. The project aims and objectives were sent by email for discussion and distribution to participants in Portuguese, and responses translated into English. Three languages were used in workshops and interviews in the field – English, Portuguese and Maçua; translation was available at each location.

Location one: Nampula City, 7 and 8 June 2016

Fourteen students, all members of Coalizao took part in this workshop for two days, which was held in a hired room in a local university. All participants spoke Portuguese, one spoke French as a second language and two spoke English. The leader of the Coalizao, Carlos Cuinica, provided further English translation. All had given permission to be filmed and interviewed, and the resulting findings disseminated within the academic community.

The project aims and objectives were read again at the beginning of the day, and the students were asked to divide into four groups, one with each research assistant to begin an informal discussion of their experiences of malaria.

All students had experienced malaria several times to varying degrees, and all had responsible attitudes to seeking treatment. They had nets in their homes, and discussed how they were able to obtain new ones often. Nampula has a large hospital and health centres, where malaria diagnosis and treatment can be easily sought and obtained.

The students were asked to consider the way others behaved when they displayed malaria symptoms – they were asked if there was a big difference in the way others in their communities acted when they suspected they had malaria. The group were quick to point out the difficulties with visiting a traditional healer in the first instance, and how many people did this. They all described the 'cut with a razor blade, and the application of a communal paste' and

understood that this did not cure malaria. They showed concern for others, and the need to protect children, pregnant women and the elderly. They also emphasized cleanliness in the home, and in the areas around it – sweeping and burning rubbish, cutting down long grass, emptying vessels after rain and keeping the toilet clean. One of the students, Micas commented thus:

I am a victim of malaria, I have been through it. A lot of us have a mosquito net, but people say 'no, the mosquito net makes me feel too hot', and we ignore the basic measures of hygiene. We have to say the same message again: let's keep the backyard clean, let's put up the mosquito net, and pregnant women especially should not sleep outside the net. These are measures we hear daily in our society. (Micas interview 2016)

The students were asked to draw how these messages could be communicated to others without words, using post-it notes, white paper and pro marker pens, and proceeded to produce a number of iterations of each idea for communication. The workshop activity was continuously filmed by researcher 2. Researcher 1 conducted informal interviews which were translated.

During the two days, the students spoke directly to camera both about the subject being investigated and their evaluation of our process. They also presented their ideas for the messages to the rest of the group at the end of day one. We found them to be intuitive, articulate and direct in relation to the content they were developing, very precise about visual details that were important in their culture and very appreciative of the process and the conditions we had provided for it to take place.

Over the two days, the workshop very quickly became friendly and social, everyone was at ease with each other, there was a lot of laughing, and friendships were developing (Figure 1):

There is a culture exchange going on here, and I am sure the Europeans are learning something from the Mozambicans. These exchanges are really important because it makes us in Mozambique 'think out of the box' – sometimes we have a mind-set, and it helps us to think globally. Young people around the world are all the same, they have power in common. They want to learn new things from each other, whether in English or Portuguese, we are open to learning... It's amazing to see how committed the young people are to the project.

(Cuinica interview 2016, COALIZAO)

On the second day, the four research assistants started developing the hand-drawn ideas digitally on their laptops, and the students very quickly took ownership of the process, with a small amount of help at the beginning – ideas developed naturally, and were easily discussed among the group. 'I was really hoping the guys we were going to meet would give us something we didn't know, something Google doesn't mention, new to us, but well known by the locals, and that's exactly what happened' (Research assistant A, Reflective Essay, August 2016).

The students identified, in their opinion, nine key moments, where a message on a sticker could either raise awareness or prompt someone to act, and gave us



Figure 1. Nampula workshop.

a great deal of visual information and several iterations of each idea to test in a further two socially different locations:

Those guys explained what the real problems with malaria prevention are, it was something amazing to watch taking shape. This project will develop and change, but what they gave it was an extremely impactful base to start with. I think that everything that came later is a deepening of their work, but those voices were *the beginning* (Figure 2).

(Research assistant A) (2016)

Location two: Ilha de Moçambique, 10–13 June 2016

The island of Ilha, a UNESCO World Heritage Site, is experiencing emerging tourism. Unlike Nampula, which is a frenetic dangerous city, it is a safe quiet place with a unique ambiance and vernacular. The aim in this location was to test the visual information already gathered for accuracy and to ask what could be added, removed or improved. Children and young people walk the length of the island to attend the three shifts of school, located at one end, a large hospital is positioned in the middle. There is some commerce and noticeable artisan skills on Ilha, however much employment comes from fishing, which gave us the first new situation to consider: the appropriation of mosquito nets for fishing, leaving families unprotected.



Figure 2. Workshops in Nampula, Day 2.

We set up our design prototypes on the ground, at the edge of a park to catch the attention of the steady footfall on the street. At first, passers-by were reticent, but slowly they came to look. Portuguese/English translation was provided by our partner NGO, and a robust discussion developed about the content of the designs between adults, teenagers and children. The people were very articulate and detailed in their criticism of small points – the way a broom was drawn – it was not entirely in the local style, the shape of a roof – it was misleading what kind of building it was. These comments on symbols and visual interpretations allowed us to tighten up the specific communication intended.

The richest commentary on the work came from a passing teacher, she commented on all the proposed designs, and made detailed points on each for improvement. She also supported our initiative, as did many others, and expressed an interest in having the stickers for her pupils when complete, and possibly a poster, which displayed them all. In total, around 100 people passed, discussed and commented on the project (Figure 3).

Filming took place during the event; participants were asked for their permission to be filmed and photographed by our translator, and were given an account of the project in Portuguese to read, before commenting on the work. Comments were translated by our partner, and documented by our four research assistants. Participants were not asked to draw new ideas on the street, our intention at this location was for the research team, all graphic designers, to add new visual information to the existing designs later at our base, according to their notes.



Figure 3. Workshops on Ilha De Mozambique.

We repeated this process on another two occasions, constantly listening to comments from the community, which were considered, added and then shown again. ‘Designers are trained to hear more than listen and it is in the listening that the community advocates and the designer includes the community as an equal participant’ (Canniffe in Resnick 2016). One of the key things that happened at this location was the addition of fine detail and local meaning. At first, we thought the designs would be very simple and symbolic, but discussion on Ilha revealed something new – participants preferred more detail, a visual story around each moment we depicted. This process was supported by some individual interviews with local people, the designs were also shown in other locations – on the terrace of a restaurant, and at the beach. We kept all iterations in order to discuss the development at our next location; we had arranged to show them to health professionals, traditional healers and educators in Mossuril on the other side of the bay.

Location three: Mossuril, 14–16 June 2016

The Teran Foundation, based in Mossuril, had arranged and secured permission for us to show the designs, and interview and film the school director, the senior doctor at the local hospital, traditional healers and the local radio station. We were also able to get opinion from many local people. Interviews and discussion were conducted in Portuguese, Maçua and English.



Figure 4. Mossuril, the school director.

First, we visited the school, where the director's first comment was about fishing nets, and how that was a big problem in Mossuril. Charities sent nets to the town often, usually leaving them to be distributed by volunteers, and a high number ended up as fishing nets – this was an important sticker (Figure 4). Next, he focused on something we learned on Ilha, that many participants thought that it was the duty of parents to protect children, and families to protect pregnant women, and that this should be communicated forcefully. The director upheld that view; he emphasized the responsibility of the individual to look after those in their care, especially children and the elderly. He looked at all the other iterations for some time, making a few comments about details, but agreeing with and understanding the content. He suggested that having these stickers in quantity would be a good thing and that if everybody used them, the message would be strong. He finished by saying they were attractive to look at, and therefore local people would be keen to have them.

We moved on to the local hospital, where we were to meet a senior doctor. There were many sick children waiting to see him, and we felt it inappropriate to take up his time. He asked to see us for a short time, and was the first person in the process to question what we were doing. He asked why we were doing this as 'we did not have malaria in Scotland'. Although the project intent was explained, he was not interested in seeing any of the work the local community had produced, nor to comment on its usefulness. To him, at that moment, we were a 'cultural invasion, good intentions notwithstanding' (Freire 2005, 95).

We moved on to a visit with the head traditional healer in Mossuril. After our experience at the hospital, we were apprehensive. The majority of the 70,000 traditional healers are regulated in Mozambique. Most are members of the organization AMETRAMO (Association of Traditional Medics of Mozambique), which brings together all the healers from across the country and issues them with a license to practice 'doctor' activities.

We were welcomed politely (we noticed that a piece of mosquito net was used for a small chicken coop). The head healer gave us his permission to film, and read through the project guidelines. He asked if we would like him to change into his uniform and we agreed this would be appropriate. He returned, accompanied by a further two healers a few minutes later, all wearing a branded uniform. The interview and discussion were conducted in Maçua and translated.

The designs were spread on the ground, and the group proceeded to evaluate them.

One design clearly showed a message instructing malaria sufferers to go straight to hospital and not to a healer. They upheld that view; all agreed that they cannot cure malaria, and therefore the design was useful. If they had one in their treatment hut, they could simply point to it. They discussed the others for some time, and were positive about the contents, especially the message that parents should protect their children under nets at night. They saw this as a fundamental responsibility that should be emphasized. When asked if they would like to have some to use, they agreed, and also asked for posters showing all the designs to give out in the community ([Figure 5](#)).



Figure 5. Mossuril, traditional healers.

The final visit of the day was to the radio station, who had heard about our work and wanted to interview the team – again, there was one difficult moment. One of the announcers asked us if we had ‘Come to save him’ and a small argument began between him and a colleague, who seemed supportive of the project. The interviewer, and the head of the station both looked at the designs and commented on the content. They felt the sticker communicating the fishing net issue was really useful and suggested some extra detail which could strengthen it visually. He went on to add that if people used it and it was visible throughout the town, the fishermen would maybe be shamed into stopping this practice:

The communication theories of semiotics and post-structuralism point out the cultural dependency of nearly all symbols. Symbols including alphabets, are not natural language with built in meaning. Their meaning must be learned and exists only within the cultural agreement of a community of like-minded individuals at a specific moment in time.

(McCoy 2004, 42)

Production, testing and review

You start with sketches, and wind up with a refined result – but something has to happen in-between.

(Wyman 2016)

The journey round three locations in Northern Mozambique gave us hundreds of iterations of the intended sticker designs. The next stage was to test the efficacy of these signs back in Mozambique and to record the feedback to identify further refinement and development, where necessary. Can they be read as the signs they denote, and can the connotation of the message change behaviour?

We had envisaged that the visual messages would be simple and symbolic, and they did indeed look this way at the start of the process in Nampula. Very quickly, it became evident that the participants preferred more authentic and articulate detail in the designs. As the stickers developed, more detail was added in each location, in particular colour, dress and accurate depictions of fabrics, houses, landscape and tools:

Funders and researchers both need to recognize that health care improvement interventions cannot be taken ‘off-the-shelf’; they require substantial investment to develop, and this should be planned for accordingly. Without this investment, funders and researchers risk further well-conducted evaluations that describe the lack of impact of poorly-designed interventions.

(Chandler et al. 2016, 24)

In effect, the participants wanted the stickers to be strong and accurate in their message, but also authentically beautiful. It is easy to lose sight of the power of desirable, attractive imagery when the purpose is dominated by utilitarian necessity. This finding challenges Haaland who posits ‘the most effective style

for communicating with rural audiences has been found to be simple line drawings' (Haaland 2001, 15), but is supported by Wyman, who states 'unclear images can be just as confusing as words in a foreign language' (Wyman 2016).

Nine key messages, displayed on round stickers, were illustrated by four artists in Scotland. A poster showing all nine together was also produced. The messages use a simple tick and cross next to images which show 'do this' and 'don't do this' (Figure 6) at key moments where malaria could be prevented or



Figure 6. The stickers.

quickly treated. A great deal of time was taken to visually develop all the details, cultural nuances and design points made by the participants in the workshops.

The developing material was shared with the participants before completion, and feedback was of excitement at seeing the final visuals emerging. We sent three batches of the finished printed material back to Mozambique in early 2017 for testing. Two were sent to Mossuril and Ilha, and one bigger batch to Nampula. Initial feedback was very positive. Our partners commented on how beautiful, authentic and warm the stickers were, that they had a sense of place and they identified with the content. In Nampula, workers in the local DHL office asked immediately if they could have some for their homes and friends.

The stickers were shown to the students who took part in the first workshop, by Carlos Cuinica who had helped facilitate the project ([Figure 7](#)). They commented on how sophisticated they were compared to the initial drawings, but that they 'Could see themselves and their lives in them' and 'They are so pretty, I would put them everywhere and look at them often'. The visuals were generally understood when shown on the streets of Nampula – people spent time actively discussing the meaning and message, while pointing out their favourites. The work was thought to be useful and valuable, we were asked to send more as soon as possible.

In Mossuril and Ilha, the stickers were shown to the participants by representatives of our partner NGO ([Figure 8](#)). Feedback was very positive on how the stickers looked, but less so on how they were understood. Having spent a great deal of time in workshops discussing the cross and tick as a way of pointing out



Figure 7. Carlos Cuinica showing the finished stickers to the participants.



Figure 8. Reviewing the stickers in Mossuril.

good and bad behaviours, it became evident that this visual mechanism was not understood by all.

The population of rural Mozambique has a low level of literacy, and the meaning of any sign is affected by who is reading that sign. In Mozambique, which has a diverse ethnic and cultural heritage that is a mix of Maçua, Portuguese and Arabic influences, the audience has a multitude of possible filters through which they might read the signs:

There is a subtle difference between making a drawing general (...) enough for it to be useful across many (...) settings and have the users identify with it, and making it so general that the users feel "this has got nothing to do with me." Researchers and artists need to be very aware of this point, and try it out consistently.

(Haaland 2001, 22)

Conclusion

The objective of the research was to use graphic design workshops to identify content for health communication, and to engage local people and communities with lived experience of malaria in the design process, using the co-design method. The process developed and used the 'vernacular vigour of indigenous, local, and special interest subcultures' (McCoy 2004, 239). Key moments to visualize as messages were identified, and hundreds of iterations were produced by over a hundred people. The participants selected the most suitable visuals and rigorously finessed them, adding local meaning and detail.

'The best work starts by building strong relationships. In our work we're very intentional about seating the right people at the table from the beginning. It's vital to have both a local connector and an inspired patron in place' (Deal 2014,

in Resnick 2016, 270). We had both of these things when we sat down with 14 students and their leader in Nampula, they gave us the base from which to begin the work. 'I think that everything that came later is a deepening of their work, but those voices were *the beginning*' (Research assistant A, Reflective Essay, August 2016).

We must continually recognize the longstanding friction and suspicion of European interventions and seek shared cultural understanding to robustly counter post-colonial attitudes from all sides. Apart from two occasions, we encountered a strong sense of solidarity for the project aims from the local community. In each location, people from all backgrounds were engaged with the principles and simplicity of the idea. They were focused on what would be useful to them, and respectful of our aims. 'Building a relationship through listening to a community should help the designer to become a valued member of that community' (Jenzer and Weinstein 2014, 333).

We encountered insightful and articulate voices, keen to share their lived knowledge with us, and to use it to generate useful visual communication, which was needed and valued. 'Dewey emphasized people's abilities to communicate and to co-operate as ways to jointly bring about positive change' (Steen 2013). As the work progressed, we as designers 'developed a strong sense of solidarity with the community being addressed' and in return (two occasions excepting) received a 'high level of earned trust from the community' (Jenzer and Weinstein 2014, 333).

It is the intention of the research team to return to Mozambique in 2018 to further analyse the data for impact. It is also our intention to seek funding for the stickers to be rolled out across the region in the first instance, ideally packed with mosquito nets, and discussions are underway in this respect with The Gates Foundation, and the Malaria Consortium in Maputo, who distribute nets widely throughout East Africa.

It is also our intention to seek funding to establish a base for them to be produced and printed locally, ensuring a sustainable future for the work which will build capacity and possibly provide employment. We will work with partner NGOs in progressing this intention. 'Creating a sustainable relationship with a community is not just knowing what the needs are, but also for the designer to share or feel empathy for those aspirations' (Benson, in Resnick 2016, 271).

As we travelled around Nampula province in June 2016, we asked all the participants to evaluate the process they were engaged in. The majority said the same thing – 'We know a lot about malaria, and what we could do better, but nobody asked us before, you were the first people to ask us for our knowledge'. Therefore, our findings support the view 'For the social designer, asking many people and listening with empathy is the key to understanding' (Benson, in Resnick 2016, 271).

In projects like these, there is always something better and more that can be done, but to do nothing is to give up hope of improving the world. Creative

consciousness and energy are powerful forces that are being employed to make the world a smaller, safer place to share and thrive in.

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